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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/369,386	08/06/1999	MOTOTAKA TANEYA	914-101	6727

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NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

PIZIALI, JEFFREY J

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/369,386

Applicant(s)

TANEYA ET AL.

Examiner

Jeff Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2005 and 07 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-10,14,16,18,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-10,14,16,18,29 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Amended claim 10 (see Page 4 of the Amendment submitted 7 March 2005) newly recites the limitation, "said organic light emission layer is in direct contact with said first and second electrode layers" (see Lines 5-6). However, the present specification discloses the organic light emission layer [Fig. 1; 4] being in direct contact with only the second electrode layer [Fig. 1; 5], and the organic light emission layer [Fig. 1; 4] separated from (and not in direct contact with) the first electrode layer [Fig. 1; 2] by a hole transportation layer [Fig. 1; 4] (see Page 5, Line 25 - Page 6, Line 18 of the Instant Specification).

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4. Claims 29 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Newly added claims 29 and 30 (see Page 5 of the Amendment submitted 7 March 2005) each separately recite the subject matter, "wherein a common electrode drive pulse is twice as long as a segment electrode drive pulse" (see Lines 1-2). However, the present specification is silent on the matter of drive pulse length. Figure 3 illustrates some common and segment electrode drive pulse waveforms. However, none of the present figures have been disclosed as being to scale.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 29 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 29 and 30 each separately recite the limitations of "a common electrode pulse" and "a segment electrode pulse" in lines 1-2. There is insufficient antecedent basis for these limitations in either claim. More particularly, the base claims do not speak to the subject matter of a "common electrode" or a "segment electrode." As such, one having ordinary skill in the art

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would be unable to determine what exact structural elements the aforementioned pulses are being applied to.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 2-10, 14, 16, 18, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rebesch et al. (US 5,781,167) in view of Tang et al. (US 5,294,869) and Koyama et al. (US 6,144,354 A). [Note: Claim order has been rearranged numerically to match claim dependencies.]

Regarding claim 10, Rebesch et al. discloses an EL emission device [Fig. 2; 200], comprising: first [Fig. 2; 216] and second [Fig. 2; 212] electrode layers, at least one of which is transparent; a

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light emission layer [Fig. 2; 214] for EL emission sandwiched between the first and second electrode layers for together supplying prescribed electric fields to the light emission layer; and voltage application means [Fig. 2; 217] for applying a voltage between an electrode included in the first electrode layer and an electrode included in the second electrode layer and for injecting electric current into the light emission layer (see Column 3, Lines 56-64), wherein at least the first electrode layer includes a plurality of electrodes arranged with spatial periodicity, the plurality of electrodes included in the first electrode layer together with adjacent regions in the second electrode layer including at least one electrode form a plurality of electrode pair regions arranged with spatial periodicity (see Column 3, Lines 40-64), the voltage application means applies the prescribed electric fields in a manner such that the prescribed electric fields are always different from each other in polarity in adjacent electrode pair regions (i.e. row-by-row or line polarity inversion) and vary in a time-dependent manner (see Figs. 6A-6F; Column 4, Line 17 - Column 5, Line 3). Rebeschi does not explicitly disclose an organic EL emission device or dot polarity inversion.

However, Tang discloses an organic EL emission device [Fig. 1; 100] comprising first [Fig. 1; R1-R5] and second [Fig. 1; C1-C5] electrode layers, at least one of which is transparent; an organic light emission layer [Fig. 1; EL] for EL emission sandwiched between the first and second electrode layers for together supplying prescribed electric fields to the organic light emission layer, the organic light emission layer being in direct contact with the first and second electrode layers, wherein at least the first electrode layer includes a plurality of electrodes arranged with spatial periodicity, the plurality of electrodes included in the first electrode layer together with adjacent regions in the second electrode layer including at least one electrode form

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a plurality of electrode pair regions arranged with spatial periodicity, and applying the prescribed electric fields in a manner such that the prescribed electric fields are different from each other in polarity in adjacent electrode pair regions and vary in a time-dependent manner (see Column 4, Line 13 - Column 5, Line 56).

Rebeschi and Tang are analogous art because they are from the shared field of EL type display devices. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to use Tang's organic EL display device with Rebeschi's EL voltage application means, so as to prevent resolution degradation on a commercially popular type of display.

Moreover, Koyama discloses an EL emission device [Fig. 1; 110] (see Column 18, Lines 60-64) comprising a plurality of electrodes included in a first electrode layer [Fig. 1; 114] together with adjacent regions in a second electrode layer [Fig. 1; 112] including at least one electrode forming a plurality of electrode pair regions [Fig. 1; 116] arranged with spatial periodicity (see Column 8, Lines 27-65), and a voltage application means [Fig. 1; 200 & 300] applying prescribed electric fields in a manner such that the prescribed electric fields are always different from each other in polarity in all adjacent electrode pair regions (i.e. dot polarity inversion) and vary in a time-dependent manner (see Figs. 7 & 11; Column 12, Line 5 - Column 12, Line 56).

Koyama and Rebeschi (along with Tang) are analogous art because they are from the shared field of EL type display devices. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to use Koyama's dot polarity inversion

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driving technique with Rebeschi's EL voltage application means (and Tang's organic EL display), so as to further improve and stabilize image qualities.

Regarding claim 2, Rebeschi discloses electric fields with at least different polarity to be applied to electrode pair regions adjacent to each other among the plurality of electrode pair regions are varied with a constant time periodicity (see Figs. 6A-6F; Column 4, Line 17 - Column 5, Line 3).

Regarding claim 3, Rebeschi discloses alternating voltages with opposite polarities are applied to electrode pair regions adjacent to each other among the plurality of electrode pair regions (see Figs. 6A-6B; Column 4, Lines 43-50).

Regarding claim 4, Tang discloses at least the first electrode layer includes a plurality of electrodes in one of a dot-like form and a stripe-like form [Fig. 1; R1-R5] (see Column 4, Line 13 - Column 5, Line 56).

Regarding claim 5, Tang discloses the second electrode layer includes a plurality of stripe-like electrodes [Fig. 1; C1-C5] positioned in parallel to the plurality of stripe-like electrodes [Fig. 1; R1-R5] included in the first electrode layer (see Column 4, Line 13 - Column 5, Line 56).

Regarding claim 6, Tang discloses the second electrode layer includes a plurality of stripe-like electrodes [Fig. 1; C1-C5] arranged to intersect the plurality of stripe-like electrodes [Fig. 1; R1-R5] included in the first electrode layer (see Column 4, Line 13 - Column 5, Line 56).

Regarding claim 7, Rebeschgi discloses a first group of electrodes [Fig. 3; 312] including every other electrode are electrically connected to each other, and a second group of electrodes [Fig. 3; 332] that remain beside the first group of electrodes are electrically connected to each other in the first electrode layer (see Column 3, Line 65 - Column 4, Line 15).

Regarding claims 8 and 9, Rebeschgi discloses a first group of electrodes [Fig. 3; 322] including every other electrode are electrically connected to each other, and a second group of electrodes [Fig. 3; 342] that remain beside the first group of electrodes are electrically connected to each other in the second electrode layer (see Column 3, Line 65 - Column 4, Line 15).

Regarding claim 14, this claim is rejected by the reasoning applied in the above rejection of claim 10.

Regarding claims 16 and 18, Tang discloses no insulation layer is provided between either of the electrode layers [Fig. 1; R1-R5 & C1-C5] and the light emission layer [Fig. 1; EL] (see Column 4, Line 13 - Column 5, Line 56).

Regarding claims 29 and 30, Rebeschgi discloses a common electrode drive pulse [Fig. 6D; Frame 1; 60V] is twice as long (in amplitude) as a segment electrode drive pulse [Fig. 6C; Frame 1; 30V] (see Column 4, Lines 51-62).

Response to Arguments

11. Applicants' arguments filed 13 July 2005 and 7 March 2005 have been fully considered but they are not persuasive. Firstly, the applicants contend the Notice of Non-Compliant Amendment (dated 29 June 2005) was in error, because "the pending claims have been numbered, in ascending order" (see Page 2 of the Response submitted 13 July 2005). However, the examiner respectfully disagrees. The examiner does not dispute that the pending claims have been *numbered* in ascending order. The Notice of Non-Compliant Amendment states, "The claims of this amendment paper have not been *presented* in ascending numerical order." Moreover, 37 C.F.R. § 1.121 states, "All of the claims presented in a claim listing shall be *presented* in ascending numerical order." Additionally, the examiner respectfully points out that 37 C.F.R. § 1.126 states, "When the application is ready for allowance, the examiner, *if necessary*, will *renumber the claims consecutively* in the order in which they appear or in such order as may have been requested by applicant." As it currently stands, claims 2-9 depend off claim 14 -- and therefore the claims have not been *presented* in ascending numerical order. The examiner is choosing to overlook this issue of non-compliance for the time being, to avoid further delays in examining the application. However, the applicants are respectfully advised to present the claims in ascending order to prevent the issuance of future notices of non-compliance.

The applicants also argue "the dot polarity inversion driving technique of Koyama et al. (US 6,144,354 A) cannot be directly applicable to an electroluminescent display apparatus" (see Page 7 of the Amendment submitted 7 March 2005). However, the examiner respectfully disagrees. Koyama states, "The first to fifth embodiments have been described with respect to an image display apparatus using liquid crystal panel 110 as an image display unit. Needless to say, an apparatus using electroluminescent elements, a CRT or the like as a display unit is also possible" (see Column 18, Lines 60-64). It is further noted that this office action relies primarily upon the dot polarity inversion driving technique of Koyama's first embodiment (see Figs. 7 & 11; Column 12, Line 5 - Column 12, Line 56). Contrary to the applicants' above assertion, one skilled in the art at the time of invention would understand Koyama's dot polarity inversion driving technique to be fully applicable to an electroluminescent display apparatus [such as taught by Rebesch et al. (US 5,781,167) and Tang et al. (US 5,294,869), for instance].

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

Conclusion

12. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J.P.

29 September 2005



BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800